The Training School Bulletin

AUGUST, 1961 Volume 58 — Number 2

Terminology in M-R
Blatt

Language Behavior
Rigrodsky-Goda

Research Programs at IREC
Stolurow

Research at Pacific State Hospital
Dingman

UNIVERSITY OF IDAHO LIBRARY

"for the practicing professions concerned with mental retardation"

the training school BULLETIN
is published quarterly by the Training School at Vineland, New Jersey, a private, non-profit School for retarded children, organized in 1888 as a pioneer in the study, education and care of those whose minds have not developed normally.

Subscription price is $2.00 a year. Address all inquiries to "Public Relations Department, The Training School at Vineland, Vineland, N. J." Entered March 14, 1904 at the Post Office, Vineland, N. J., as second-class matter under Act of Congress of July 16, 1894.

The BULLETIN is open to original articles dealing with the aspect of mental retardation. The Editors will consider for publication the following types of material:

1. Articles of a technical nature, e. g., reports of research, discussion of problems in the field.
2. Non-technical articles of general interest, e. g., human interest stories of the mentally retarded, restatements of technical material for the layman.
3. Book reviews and news notes.
4. In special instances, republication of important articles having limited distribution.

Authors receive 25 copies of the Bulletin free and may order additional reprints at own expense. The author may have to share part of the publication cost of excessive illustrative or tabular material.

Address all manuscripts to: "Editor, Training School Bulletin, The Training School, Vineland, N. J." The Bulletin adheres to the conventions concerning references, bibliographies, citations, preparation of tables, cuts, etc., as described in the American Psychological Association's Publication Manual, 1957 Revision, supplement to the Psychological Bulletin, Vol. 49, No. 4, Part 2, July, 1952.

the training school BULLETIN

Volume 58 August, 1961 Number 2

table of contents:

Editorial: Emotional Emphasis 46

Towards A More Acceptable Terminology in Mental Retardation
Burton Blatt 47

Language Behavior of a Group of Non-Speaking Brain-Damaged Mentally Retarded Children
S. Rigrodsky and S. Goda 52

Research on Mental Deficiency at The Institute for Research on Exceptional Children, University of Illinois
Lawrence M. Stolurow 61

Description of NIMH-Sponsored Research Programs at Pacific State Hospital
Harvey F. Dingman 74

EDITORIAL BOARD

WALTER JACOB, Ph.D.

IVAN HOLOWINSKY, Ed.D. SEYMOUR RIGRODSKY, Ph.D.
ALICE MORRISON NASH SHELDON ROSENBERG, Ph.D.
BERNARD F. NIEHM JAMES D. EADLINE

Editorial:

Emotional Emphasis

THE mentally retarded child usually is acknowledged to be multiply handicapped. This accounts for the need of many schools and institutions to carry at least a modicum of staff members to work with the concomitant issues possessed by many of our children.

Of late years emotional disturbance has become the most discussed of all these additional handicaps. Obviously all mentally retarded children are not also emotionally disturbed. On the other hand it is not difficult to perceive emotional problem patterns in most of us and, sic, in most mentally retarded children.

This latter, however, does not justify placing labels of various patterns of emotional upset willy-nilly on these children. Later generations of workers with them may well place more severe interpretations on these labels than they deserved.

Nor does it justify whole programs set up for mentally retarded children with consistent, all-enveloping psychiatric orientation.

The point we wish to make is that psychotherapeutic attention, like all other types of attention, should be given to those who, after careful consideration, need it. When professional zeal develops too strongly over some newly-found interest, the spotlight of thoughtful judgment may act to prevent the pendulum from swinging off its track.

W. J.

Towards A More Acceptable Terminology in Mental Retardation[1]

Burton Blatt

Problem

More than a year has elapsed since the publication of the long awaited and sorely needed terminology and classification manual, made possible through the joint sponsorship of the United States Department of Health, Education and Welfare and the American Association on Mental Deficiency (Heber, 1959). Despite the considerable significance this manual will have in aiding the establishment of a commonly understood and accepted nomenclature and coding system among those in the medical profession and particularly for institutions, its sections on definition and behavioral classification (Ibid pp 3-4, 56-57) may inspire greater modification in philosophy and practice within the fields of education, psychology, and habilitation.

As stated in the manual:

> "MENTAL RETARDATION REFERS TO SUBAVERAGE GENERAL INTELLECTUAL FUNCTIONING WHICH ORIGINATES DURING THE DEVELOPMENT PERIOD AND IS ASSOCIATED WITH IMPAIRMENT IN ADAPTIVE BEHAVIOR IN ONE OR MORE OF THE FOLLOWING: (1) MATURATION, (2) LEARNING, AND (3) SOCIAL ADJUSTMENT. (Ibid. p. 3).

Environmentalists have been querulous with those definitions of mental retardation that describe limitation, that predict irreversibility and social incompetence, and require constitutionality. However, this new definition may be regarded by more traditionally oriented professionals as not descriptive of the retarded as a group while being misleading, ambiguous, and impractical. They may question the definition on these grounds:

Burton Blatt, Ed.D., is Professor and Chairman of the Special Education Department, Southern Connecticut State College, New Haven, Connecticut.

1. *Parts of this paper were presented at the Institute on Habilitation for Work of the Mentally Retarded arranged through Region I of the U. S. Dept. of HEW, South Egremont, Mass., November 1, 1960. In addition, it served as a basis for a seminar conducted by the author for supervisors, New York City Bureau for Children with Retarded Mental Development, January 30, 1961. The author expresses deep gratitude to George Barbner, Jr., for permission to quote from and revise sections of a jointly authored paper (Barbner-Blatt, 1959) for inclusion in this study.*

1. It refers to function rather than, as is traditional, to capacity; it does not require a prognosis of retardation at maturity and, consequently, it raises these disturbing questions:
   a. Is an emotionally disturbed child, functioning on a subaverage level and with impairments in adaptive behavior, mentally retarded in spite of a clinical diagnosis of at least average potential?
   b. Is mental retardation reversible? If this is true as is implied (or at least not denied) in the definition, should schools and clinics attend to a responsibility to remediate rather than, as is almost universal policy, discount any such possibility?
2. Insofar as the definition is concerned, "Subaverage refers to performance which is greater than one Standard Deviation below the population mean of the age group involved on measures of general intellectual functioning." (Ibid, p. 3). In translating the Sigma Score to I.Q., this would increase the upper range of eligibility for special class education to an approximate score of 85 and make the profession theoretically responsible for the education of 16% of the school population (to say the least, an awesome contingency).

On the other hand, adherents to the new definition can take the position that the aforementioned "criticisms" are, in fact, assets rather than liabilities. It can be claimed that this definition makes no pretense of labeling that which can not be detected; it does not assume a constitutional condition of the central nervous system to be present on the basis of performance alone rather than, and only, when specific constitutionality is located. In particular, the so called "garden variety" of "familial" child may be more adequately described by the new definition. These advocates react with alarm to the continued use of the older "constitutional" definitions and the recurrent widely held assumptions surrounding them (Blatt, 1960). In a previously published paper the writer analyzed the validity of a traditional definition,[2] as well as several prevalent assumptions and, on the basis of an examination of research available, concluded that:

1. Large groups of mentally subnormal children, presently classified as "familial" mentally retarded, should be assumed free of constitutional deficiencies or genetic abberrations that may result in inferior intellectual development.
2. A great many mentally subnormal children, presently classified as mentally retarded, cannot be so classified using the conventional definition that requires constitutional defect.

2. *"Mental deficiency is basically a physicial or constitutional defect . . . exists from birth or early age . . . is incurable and irremediable . . . results in the inability of the individual to profit from ordinary schooling . . . of an hereditary nature (40 to 50%)" (Goldstein, 1948)," (Mental Deficiency is used here generically).*

3. There is impressive evidence that numerous children, presently classified as mentally subnormal, acquire this subnormality sometime after birth or early age.
4. There is impressive evidence that numerous mentally subnormal children and adults, originally classified as mentally retarded, can not be so classified on later evaluations.
5. There is impressive evidence that the role of cultural and psychological variables in the causation of mental subnormality has been greatly under-estimated.
6. There is little evidence to support the wide-spread practice of placing educable mentally retarded children in conventional special classes rather than in the regular grades or in some other, as yet unknown, more suitable classes.
7. There is a dearth of evidence supporting hereditary theories of mental subnormality.
8. As a group, educable mentally retarded children, are not significantly different in physical attributes from typical children.
9. There are low relationships, "j" shaped in character, between delinquency and intelligence.
10. Many present assumptions concerning the mentally subnormal are unsubstantiated, are reinforced with prejudice, and flourish in an atmosphere of rigid and stereotyped thinking. (Blatt, Op. Cit. pp. 58-59.)

In respect to the above considerations, it does *appear* that the new definition more adequately describes the nonorganic "familial" child; at least, it appears to be less restrictive or pessimistic. However, used as a comprehensive term, it does suffer from practical, though nonetheless important and obvious, weaknesses. Most significant of these are:

1. The possibility that the uncritical adoption of this definition will encourage the placement of emotionally disturbed, sensory impaired, and socially handicapped children with remediable conditions in classes for children with mental retardation, a condition presently believed to be irremediable.
2. The probability that, in the event of the above happening, special classes for the "mentally retarded" will achieve with quickness and sureness that most dreaded appelation — "dumping grounds."
3. In the event that the race between more classes and adequate diagnostic facilities is somehow won by the professionals concerned with the moral and educational responsibilities of the diagnostic decision, the new definition nonetheless considers 16% of the school population potentially eligible for special class placement. At this point, not being able to claim unqualified success with 2% of the school population (the approximate group

currently eligible) hardly enables a professional discipline to assume responsibility for an additional 14% without a shocking measure of rose tinted myopic naivete.

Recommendations

It is plainly apparent that any definition (especially one predicated on the use of I.Q. or Sigma Score, however high, however low) can be repugnant to the clinical group which is much more concerned with the condition of the individual rather than with the tag he is given and which is often forced to witness the results of its carefully executed differential diagnosis and prescription education reduced to a series of meaningless labels and administrative expediencies. It is equally apparent that more important than the definition is the series of accompanying statements that reduce needless debate and misunderstanding. It does appear paradoxical that although, on the one hand, the uncritical acceptance of the I.Q. score as the basis for terminology is usually anathema to the more enlightened professionals and merely results in irrelevant name calling, on the other hand, the most scrupulous avoidance of this pitfall is, in strict reality, fatuous and the "pigeon holing" eventually occurs. In fact, severe restrictions in using terminology may well deprive the profession of a most valuable tool — the symbol. Therefore, for various reasons, both good and bad, terminology is demanded. The following recommendations may contribute to clearer agreement on and acceptance of the definition under discussion:

1. Mental Retardation should be defined as referring ". . . to subaverage general intellectual functioning, (generally irreversible), which originates during the developmental period and is associated with impairment in adaptive behavior in one or more of the following: (1) maturation, (2) learning, and (3) social adjustment."

2. Subaverage should refer ". . . to performance which is greater than *one and one-half* Standard Deviation(s) below the population mean of the age group involved on measures of general intellectual functioning."

3. For the purposes of classification and placement, the following nomenclature may increase accuracy in describing the two major etiological categories of mental retardation (Brabner-Blatt, 1959).

a. *Individuals with Organic Retardation:*
Individuals so classified will exhibit, upon differential diagnosis, mental retardation: originating at or shortly after birth, incurable and irremediable, resulting in social inadequacy, and concomitant with recognized central nervous system pathology.

b. *Individuals with Functional Retardation:*
Individuals so classified will exhibit, upon differential diagnosis, mental retardation: originating during the developmental period, characterized by insufficient or inefficient attention to mental development during that period, subject to possible (although heretofore improbable) reversibility through changes in environment, generally resulting in social competency of the individual in his cultural milieu, and concomitant with either the absence of central nervous system pathology or such minimal pathology as not to preclude eventual typical social and psychological functioning.

4. As an *Ideational Research Tool,* the following postulate warrants consideration:

ALL MENTALLY RETARDED INDIVIDUALS WHO DO NOT EXHIBIT CENTRAL NERVOUS SYSTEM PATHOLOGY, SHOULD BE *ASSUMED* CAPABLE OF ACHIEVING AT LEAST TYPICAL INTELLECTUAL, PSYCHOLOGICAL, AND SOCIAL FUNCTIONING, AND FOR THESE INDIVIDUALS PRESENT INFERIOR PERFORMANCE SHOULD BE CONSIDERED REMEDIABLE. (Ibid, p. 4.)

5. The aforementioned *Manual on Terminology and Classification on Mental Retardation,* a rare contribution towards the solution of problems in nomenclature, should receive due recognition as *the* standard reference in this knotty area, notwithstanding expected and frequent revisions, that will be happily necessitated by the mounting activity in research and application and the encouraging attention given to the field by all disciplines practicing in the helping professions.

References

Blatt, Burton, "Some Persistently Recurring Assumptions Concerning the Mentally Subnormal," *Train. Sch. Bull.,* 57: 48-59, 1960.

Brabner, George, and Blatt, Burton, "A Research Postulate: Theoretical Archetype for Experimentation and A More Acceptable Nomenclature," Unpublished Paper, 1959, 5 pp.

Goldstein, Irwin, "Implications of Mental Deficiency," *Occupational Education:* 5:149-172, 1948.

Heber, Rick, editor, "A Manual on Terminology and Classification in Mental Retardation," *Monograph of the American Journal of Mental Deficiency.* Vol. 64, No. 2, 1959, 111 pp.

Language Behavior of a Group of Non-Speaking Brain-Damaged Mentally Retarded Children

S. Rigrodsky and S. God

Several studies (Kennedy, 1930; Mecham, 1955; Sacks, 1951; Schlanger, 1953) have reported the incidence and type of speech disorders found in an institutionalized mentally retarded population. These studies have defined and described the responses of those children with spoken language in terms of sound development, articulation, rate and voice production. Speech disorders are reported as prominent in mentally retarded children with articulation errors being the most frequent type of speech defect usually reported. Other studies, (Bibey, 1951; Lubman, 1955; Schneider and Vallen, 1954) concerned themselves with the ability of retarded children to benefit from direct or modified articulation therapy programs.

In institutions for the retarded there can usually be found a population of children who do not use verbal language for expressing their wants and needs. Although there are large numbers of non-speaking children in many institutions, the language of non-speaking children has received little study. In describing this group, one author (Schlanger, 1957) described these children as those whose, "Expressive language behavior is rudimentary with a complete or partial lack of verbal response. If there is oral responsiveness, this does not go beyond the utilization of undifferentiated gestures and/or one word sentences."

Based on the review of the literature and on the personal observations and experiences of the authors there is a need for a descriptive study of the means and methods which non-speaking children use to express their wants and needs. Further, although these children do not speak, they are not completely silent and they appear to be capable of receiving and interpreting speech in varying degrees. Our observation has indicated that there may be different levels of comprehension and expression of language present in this population. The results of this type of study could have far reaching implications for those planning programs for the mentally retarded. Educational and language therapy could then be based on the particular level of the individual non-speaking child.

Seymour Rigrodsky, Ph.D., is Chief, Speech-Hearing Division, The Training School at Vineland, New Jersey. Sidney Goda, Ph.D., is Director, Speech and Hearing Clinic, The Burke Rehabilitation Foundation, White Plains, New York.

Method

SUBJECTS:

This investigation was designed to evaluate and describe the expressive and receptive language of a group of institutionalized mentally retarded children. All the children in the study were reported or suspected of having brain damage. Medical records, including neurological and EEG studies as well as psychological impressions based on test performance were used to determine the possible presence of brain damage. Although several children had negative neurologicals and essentially normal EEG's, patterns of performance on the various psychological tests suggested symptoms or organicity to the examining psychologist.[1] For purposes of this study non-speaking children were described as those who made no sounds on any occasion, to those who are capable of uttering isolated words usually following auditory stimulation, but who do not ordinarily use spontaneous speech. Twenty children were studied who ranged in age from six to fourteen years and were residents of a private school.[2] The I.Q.'s of the group as measured on various psychological tests ranged from an estimated 14 to 84.[3] It was not possible to administer psychological tests to four of the children, usually because they were not cooperative or were extremely hyperactive. The mean I.Q. of the group was 37, with the majority of the children being in the severely to moderately retarded range. Eighteen of the 20 children had received at least six months of speech therapy.

Procedure

The children were observed in various environments:

A. In unstructured free play periods, both expressive and receptive language were evaluated although observations were directed to measuring expressive language. The authors observed the children in two different types of free play situations. First they were observed in the playroom of their cottage, where several of the children were playing individually and in groups. No attempts were made to provide special toys or games. The children were permitted to play with the toys usually found in the cottage. Reactions to houseparents' commands and directions were noted. In a second situation each child was brought to the speech clinic and was permitted access to a number of different toys. Individual free play with minimal adult participation was encouraged. Each child was evaluated at least three times in both situations. Gestural and verbal communication was recorded by the examiners. The random sound production of the child was

1. *This information was obtained from the annual departmental reports completed by the various departments of The Training School at Vineland, New Jersey.*
2. *The Training School at Vineland, New Jersey.*
3. *For each child the latest psychological evaluation was used. The Merill-Palmer Scale of Mental Tests was the most frequently used test. Other tests attempted were the Cornell-Coxe Performance Ability Scale, Ammons Full Range Picture Vocabulary Test; and the Leiter International Performance Scale.*

also recorded. Attempts were made to describe the situation during which the communicative act occurred and whether the response was meaningful to the situation.

B. In a structured test situation each child was seen individually. The emphasis at this time was on sampling receptive language ability. Initially, comprehension items of the Stanford-Binet Form L which do not require verbal language responses were administered to each child. Items included were Identifying Objects by Name, Identifying Parts of the Body, Obeying Simple Commands, Identifying Objects by Use, Pictorial Identification and Three Commissions. The Peabody Picture Vocabulary Test was also administered. The last item on the battery was an object articulation test that had been successfully administered to a large group of institutionalized mentally retarded individuals (Rigrodsky, 1959).

In order to fully evaluate the child's language ability and to add support to the observations, teachers and houseparents were asked to complete a questionnaire describing language usage. The items included in the questionnaire were used to elicit the respondent's awareness of the child's understanding and usage of Language (Table 1).

The purpose of the test battery was to observe language responses in structured test situations as compared to the free play periods. The authors made no attempt to score the various sub-tests but rather used the results as an aid to establishing levels of language comprehension and usage.

Results and Discussion

This investigation revealed that there was a wide range in the ability of these non-speaking children to utilize and comprehend verbal and gestural language. Comprehension of language was the most obvious area of differentiation for this population. At one extreme children in the non-speaking group did not appear to comprehend any formal language and at the other extreme there were children who could easily identify familiar objects, carry out most requests and even follow simultaneous directions. The receptive language of these children approximates the following four levels:

Level I —Child responds to language only if gestures and physical handling are used with minimum if any response to auditory language. Often is not attentive to sound stimuli and will even ignore consistent loud signals.

Level II —Child can point out some familiar objects and pictures but has difficulty in following directions and commands.

Level III—Child can identify familiar objects readily and follow commands although inconsistently and depending on the length of the sentence in words and the syntactical arrangement of the words.

Level IV—Child can follow directions easily and might even be able to follow simultaneous directions.

Table 2 shows that the numbers of children are approximately equally distributed at each of the four receptive levels. Those children at Level IV appeared to be more aware of their environment as measured by their handling of test materials and in the manner in which they manipulated toys and objects. Their play was more complex than that of any of the children classified under the developmental schema. They would build beyond the concrete function of the object itself. For example, they would use a wooden stick for an airplane, etc. Although it was not possible to correlate language comprehension to intelligence because of the different psychological tests which were administered, the data suggested the measured intelligence would appear to be highly related to level of comprehension. However, intelligence and independent action do not appear to be the only factors influencing language behavior. For example, in another study completed by one of the authors (Rigrodsky, 1958) with a population of institutionalized retardates, it was found that speech sound development was greatly influenced by the amount of family interest and contact that the child experienced in his stay at the institution.

Obviously, the range of expressive language (Table 2) was not as wide as that established for comprehension of language. However, it was still possible to categorize this behavior within developmental levels. The range extends from minimal vocal utterances to the use of some meaningful words. The following categories describe the expressive language of this sample. Similar groupings were used to describe a small group of moderately retarded children by one of the authors (Goda, 1960).

Level I —Child rarely uses any vocal utterances even during play activities.

Level II —Child uses random vocalizations made up of vowels and consonant combinations without apparent auditory awareness, again usually during random play.

Level III—Child uses isolated vowel utterances and vowel consonant combinations with auditory awareness and frequent repetition of self-produced sounds and sound combinations.

Level IV—Child uses vowel utterances and vowel consonant combinations with apparent auditory awareness of self produced sounds and the sounds of others, with some imitation of the sounds and even words of others. Some communicative language.

Level V—Similar to Level IV with the addition of one or several meaningful words.

Table 1

LANGUAGE QUESTIONNAIRE

I. Understanding

1. How do you make the child understand what you wish of him?
   a. Not at all .....
   b. Gestures .....
   c. Speech .....
   d. Other .....
2. If you use gestures, list the wants you make known through their use:
3. If you use speech, list some of the words you use:
4. If you use other methods, describe them:
5. How much speech does the child seem to understand?
   a. None at all .....
   b. His name only .....
   c. Names of friends .....
   d. Names of familiar objects and pictures .....
   e. Actions .....
   f. Requests .....
6. If you have checked d, e, f, please explain:

II. Expression

1. How well does the child make his wants known?
   a. Not at all .....
   b. Very poorly .....
   c. Poorly .....
   d. Fair .....
   e. Good .....
   f. Very good .....
2. How does the child make his wants known to you?
   a. Facial expressions .....
   b. Noises .....
   c. Gestures .....
   d. Speech .....
   e. Other .....
   f. Explain in detail the items you have checked:

Table 2

	Number of Children at Each Receptive and Expressive Language Level				
	I	II	III	IV	V
Receptive	5	6	4	5	
Expressive	4	4	3	4	5

Table 2 shows that as for level of comprehension the numbers of children are almost equally distributed at each of the five expressive levels.

The greatest sound production of most of the children occurred during their free play time in the cottage. The least amount of oral activity was noted during the structured testing periods. Initially there were a few children in this group who made no sounds. However, as the study progressed all children were observed to have made sounds on at least one occasion. There is a tendency for the individual further advanced in level of comprehension to be equally advanced in expressive language. For example, of the five children at Receptive Level V, three of the children were at Expressive Level IV or V. While at the other extreme, of the five children grouped at Receptive Level I none scored higher than Expressive Level III. Four of the five were at Expressive Levels I & II. Interestingly enough, there were a few children whose expressive language was apparently more developed than their receptive language. For the most part these children tended to exhibit vowel consonant combinations with auditory awareness and repetition of self-produced sounds but at the same time they were not usually attentive to sound stimuli produced by others. The data would indicate that there is a need for a study that would measure the inter-relationship between language comprehension and expression.

The following are case descriptions of children classified under the present communicative schema:

Level I Expressive Language, Level III Receptive Language - J. W., B.D. 12/3/45, admitted to The Training School - 9/8/57. Medical classification is mental retardation of unknown etiology. At the latest yearly evaluation she had been diagnosed as being profoundly retarded. She is reported to need assistance in all areas of self help. She is in a special activities class where the emphasis is on personal social training, arts and crafts and simplified homemaking activities. She is capable of following some simple directions but rarely initiates sounds. She had been in a speech therapy program but this was discontinued as the therapist felt that her responses were minimal.

Level II Expressive Language, Level III Receptive Language - A. C., B.D. 3/12/48, admitted to The Training School 6/25/56. Medical classification is mental retardation, severe, congenital cerebral maldevelopment due to trauma at birth. She can dress herself, but needs assistance in bathing, and is toilet trained. Like the first case described she is in a special activities class. There is little relationship with peers and she prefers to be with adults. She can follow some simple directions but is generally unresponsive: Most of her speech production consists of jargon. She was also dropped from a speech therapy program because of lack of response.

Level III Expressive Language, Level II Receptive Language - J. W., B.D. 11/11/53, admitted to The Training School 9/23/58. Medical classification mental retardation, severe with organic involvement due to infection. His right arm and leg are spastic. He is in need of assistance in all self-help areas, including feeding and dressing, and is not toilet trained. Presently he is in a nursery program on a half-day basis. Class activities include learning every day habits, physical education, play activities, music and rhythm, and arts and crafts. He apparently enjoys his class and participates in group activities. He especially enjoys music activities. He needs consistent stimulation in order to perform. Usually does not respond to verbal commands or directions and has difficulty pointing out objects and pictures. During his undirected play a great deal of verbalization occurs. This is essentially repetitions of consonant vowel combinations from which he apparently receives self satisfaction. He is presently enrolled in a speech therapy program.

Level IV Expressive Language, Level III Receptive Language - H. A., B.D. 1/4/51, admitted to The Training School 5/5/58. Medical classification is mental retardation, profound, associated with post-natal infection (encephalitis). She is described as controlling, stubborn and negativistic. Some signs of improvement have been noted in her relationship to peers and adults. She needs complete assistance in all self care areas and has occasional toilet accidents. This child is also enrolled in a special activities class. Teacher has recently noted an increase in attention span and she is beginning to participate in all the class activities. She responds to some directions and commands but inconsistently. Speech attempts are consistent sound patterns obviously oriented to specific items and objects. Greatest amount of speech occurs during free play situations. She is presently in speech therapy. She has begun to correctly identify several objects and pictures when formal materials are used.

Level V Expressive Language, Level IV Receptive Language - S. C., B.D. 4/14/50, admitted to The Training School 10/18/59, medical classification severe to moderate retardation due to congenital cerebral maldevelopment with cranial anomaly and questionable mongolism. He has made a satisfactory adjustment to The Training School and apparently enjoys the company of his cottage and schoolmates. He is capable of dressing himself except for tying and buttoning his clothing. In school he is in a pre-primary program. The class activities include arts and crafts, music and rhythm, physical education, number and word recognition, language development and self-care training. He is cooperative and appears to be making some progress in school. He can put simple puzzles together, match some colors and can use a scissors with assistance. Spontaneous speech is at a minimum but he can produce several intelligible words.

There is a noticeable increase in his consonant production following auditory stimulation. He is capable of following relatively complicated instructions. He is now enrolled in a speech therapy program.

The results of the language questionnaire indicate that the teachers' and houseparents' evaluations of language behavior were closely related to that observed in the free play situations. None of the children were reported to have a more complete verbal repertorie than that which was elicited during the examination period. There were indications that teachers and houseparents were inclined to accept and even encourage language activities in an attempt to maintain the communicative process. These findings suggest the need for the establishment of a language stimulation program in both the cottage and class-room situations. It is possible and the data suggests that these therapy programs be varied and presented at the child's level of development.

Summary

The language behavior of twenty non-speaking mentally retarded children was observed and measured as the children were engaged in free play and in structured testing sessions. A questionnaire describing the language of these children was completed by houseparents and teachers. This paper indicated that there is some variation in the ability of non-speaking children to receive and express language. The children were grouped according to one of several distinct levels of language development

References

Bibey, M. L., "A Rationale of Speech therapy for mentally deficient children," *Train. Sch. Bull.*, 47, pp. 236-239, 1951.

Goda, S., "Vocal utterences of Young Moderately and Severely Retarded Non-Speaking Children", *Amer. J. Ment. Defic.*, 65, pp. 269-273, 1960.

Kennedy, L., Studies in the Speech of the Feebleminded, Ph.D., Dissertation, University of Wisconsin, 1930.

Lubman, C. G., "Speech Programs for Severely Retarded Children", *Amer. J. Ment. Defic.*, 60, 297-300, 1955.

Meeham, M. J., "The Development and Application of Procedures for Measuring Speech Improvement in Mentally Defective Children, *Amer. J. Ment. Defic.*, 60, 301-306, 1955.

Rigrodsky, S., Hanley, T. D., and Steer, M. D., "Application of Mowrer Autistic theory to the Speech Habilitation of Mentally Retarde Pupils" U. S. Office of Education Cooperative Research, Proje No. 159, 1958.

Sachs, M. H., "A Survey and Evaluation of Existing Inter-relationship Between Speech and Mental Deficiency," Master's Thesis, Universi of Virginia, 1951.

Schlanger, B., "Speech Examination of a group of Institutionalized Mentall Handicapped Children," *J. Sp. and Hear. Dis.,* 18 pp. 339-349, 195

Schlanger, B., "Oral Language Classification of The Training Schoo Residents," *Train. Sch. Bull.,* 53, pp. 243-247, 1957.

Schneider, B., and Vallon, J., "A Speech therapy Program for Mentally Retarded Children," *Amer. J. Ment. Def.,* 581, pp. 633-639, 1954.

Research on Mental Deficiency at The Institute for Research on Exceptional Children, University of Illinois[1]

Lawrence M. Stolurow

First let me briefly describe the Institute's place within the University and the State of Illinois.

The institute for Research on Exceptional Children (IREC) was founded in 1952 at the University of Illinois as an interdisciplinary group to accomplish a three-fold purpose. This is to help improve current understanding of the problems and needs of handicapped and gifted children, to enhance the effectiveness of private and public agencies in their behalf and to develop specialists and leaders in the education of exceptional children.

An unusual feature of the Institute is its inter-agency character. It was established with a co-operative relationship to the State of Illionis' Departments of Public Welfare and Public Instruction. Personnel from state agencies can be, and have been, appointed as research associates in the Institute on various research projects. Also, the Advisory Committee of IREC, its policy-making group, has, as a part of its membership, representatives at these two State Departments. In addition, these State Departments, through research grants, contribute to the financial support of the Institute's program, and they make their facilities available for research projects and for the training of Institute personnel. In a manner of speaking, the state facilities — the public schools and institutions — represent the research laboratory of the Institute. Hopefully, in the near future, we will have our own laboratory school. However, the Institute does not now; our facilities simply house our staff and equipment.

Through close ties, at least in our view, both with important state agencies, and within the University, the Institute contributes to the development of new knowledge through research and to the training of research workers and teachers. It should be pointed out that the Institute's role in education is one that is accomplished through dual status of its staff who joint appointments in the Departments of Education, Psychology, and Sociology.

Lawrence M. Stolurow, Ph.D., is Professor, Department of Psychology, The Institute for Research on Exceptional Children, University of Illinois, Urbana, Illinois.

1. *Presented at the Symposium: "Comprehensive Research Programs Organization, Trends and Findings" of the Annual Meeting of the American Association on Mental Deficiency, Cincinnati, Ohio, May 2-6, 1961. The author would like to acknowledge the help received from Bernard Farber, Herbert Goldstein, James McCarthy and James Moss, who read and commented on the manuscript.*

From these introductory comments the general program of the Institute can be seen as including much more than the research on the mentally retarded which will be briefly described here. The total program includes work with the gifted, the blind, the deaf, the emotionally maladjusted, etc.

Program on Mental Deficiency

The two main areas of research within our total program relating to mental deficiency are psychological and sociological. Let me describe the program of sociological studies first.

SOCIOLOGICAL STUDIES

The two major sociological problems of concern in the Institute now are those relating to the effects of the child upon the family and the characterization of the informal organization of the wards in the large state residential schools.

Studies of the family. Knowledge of the factors relating to the family's reaction to a mentally retarded child could have both basic and applied implications. It is from this general and double-barreled view that Professor Farber, Sociologist on the Institute staff, has been investigating the problems relating to retarded children. One way in which these studies could contribute to basic knowledge is to the development of a taxonomic system for classifying families. Here we are interested in being able to make useful descriptive statements about families, statements which would permit one to make decisions regarding the reactions the family might have to crises such as the appearance of a mentally retarded child. Secondly, a useful description would provide a basis for indicating the type of therapeutic action that might be taken to head off the critical conditions which otherwise lead to family disorganization. Thus, we see a potential payoff of this research in its implications for social work and family counseling.

Starting with Burgess's view of the family as a unit of interacting persons and the resulting dichotomy of family types as either "companionship" or "institutional", Farber has made some fundamental contributions to a more generally useful taxonomy of families. Whereas Burgess employs the notion of social control as the basis for his classification system, Farber through his studies of the families of mentally retarded children, has used four bipolar value dimensions which are assumed to differentially determine the way families react to problems and thus contribute importantly to their solidity or dissolution.

The *first* is the social-emotional system of personal relations between family members, on the one hand, and on the other hand, the institutional and instrumental pressures to maintain continuity of the family unit. Functionally, this distinction relates to the differences in value placed upon

companionship, personality, emotional security, and affectional satisfaction on the one hand, and on the other hand, upon the economic security, physical health, adherence to the moral and religious principles as accepted by the family.

The *second* is role orientation versus career orientation. Here the short-term and the long-run considerations are the contending pressures in perplexing situations. Families are assumed to differ in the emphasis placed on the immediate-role factor versus the career considerations of its members. Depending upon the values placed on these two types of activities differences in family integration appear.

The *third* is family versus community commitments. This needs no explanation. Families differ in the degree to which these two demands for time are considered and valued.

The *fourth* is parent versus child orientation in terms of gratification of individual needs.

From several studies relating to these dimensions of family organization based on samples containing a retarded child, Farber has identified the following types: (a) child-oriented; (b) home-oriented; (c) parent-oriented. Some advantage in understanding the dynamics of family life seems to be gained from this formulation which may be seen as one extension and further development of Burgess' typology. More specifically, Farber's analysis seems to offer definite characteristics of family organization that can be operationally implemented in testing hypotheses. This analysis could provide the basis for the development of standard instruments and indices with predictive value. Furthermore, if sensitive enough, these instruments might permit one to characterize the changes taking place as a consequence of the therapeutic action taken by agencies in behalf of the families.

Impact of retarded child on family integration. Farber also has been concerned with identifying the dimensions of the impact that a retarded child makes on the family. The presence of a retarded child is seen as a major type of family crisis, one which has kinship with other significant crises within the family. Thus, this crisis is seen in the larger perspective as one of many possible types having significant sociological effects. Presumably, these effects upon the family can be determined, characterized, and dealt with in more efficient manner than is now possible with the limited understanding which we now have. Three steps in the total reaction process to this crisis are: (a) the handling of the child at home; (b) the decision to institutionalize; and (c) the adjustment to institutionalization itself.

The degree of impact was related to marital integration and separate estimates of the impact were made in relation to the child's sex. The overall trend was that at the time of the diagnosis that the child is re-

tarded, the boy had greater emotional impact than a girl upon the father but generally the sex of the child made little difference in the initial emotional impact upon the mother. With time, the pattern changed and the mother later regarded the boys as making greater demands upon them than their daughters. Thus, there seems to be a sex-link to the reaction to crises.

Another dimension relates to the support provided the family by the community. Again this was examined in relation to family integration. One of the clearest findings was that when the parents were in frequent contact with the wife's mother, their marital integration tended to be high. Frequent contact with the husband's mother was related to low integration. The difference seems to be related to the reaction (sympathy or blame) of the parental mother to the mother of the retarded child.

In relation to the decision to institutionalize the willingness of the parents depended upon socio-economic status. With low status wives there was greater willingness to institutionalize and high status husbands there was greater willingness. Religious differences also related to the willingness of parents to institutionalize the child. In general, the findings relating factors to the decision to institutionalize indicate that not only is the type of family crisis an important determiner, but also the place of the family in the community with respect to socio-economic status and religious affiliation were important.

Some of the implications from this research might be summarized briefly. These studies provide a better and clearer view of the impact which retardation has on the family than was previously available. Many gaps have been uncovered, but many still exist. The data are not sufficient to make a systematic interpretation, however, the data do suggest some of the basic dimensions of the socio-psychological problems produced by retardation upon the family. Combined with additional data they could contribute to a more thorough understanding of the family as a social entity. Furthermore, these data could provide a basis for the development of experimental and eventually definitive therapeutic practices. Thus, data from these studies could lead to the development of procedures which would aid in case-work practice and make it more science than art. Hopefully, preventative measures might also be suggested by the findings, measures which would contribute to softening the effect which the retarded child might have on the family. Furthermore, decisions to institutionalize might be made on a sounder and less emotional basis.

Research on social organization in institutions. The research on the informal organization of the institutional wards is designed to discover determinants of social status among institutionalized mentally retarded boys. The assumption basic to the study is that social organization within a ward at an institution is a consequence of the formal norms and the

functions of the institution. The school has two basic formal functions — rehabilitation and custody. The formal norms correspond to these functions and the research problem is to determine the resulting informal structure and its implications.

Preliminary study revealed existence of a dichotomy in the informal social structure "high brow" and "low grade". These were terms of self and peer reference to almost any activity on the part of a boy — working, homosexual activity, and bossing. The data indicate that personal cleanliness, work status, intelligence, and attendance at occupational therapy classes were most important. Of lesser importance were popularity and age at admission. Boys appointed by the attendants to assist in maintaining order had higher status than any other boys in the ward.

This was only a preliminary study and one which would have implications for the management and development of more effective policies within the type of institution.

PSYCHOLOGICAL STUDIES

The three psychological studies in our program are concerned with psycho-educational problems. The first study under the general supervision of Professor Herbert Goldstein is titled the "Efficacy of Special Class Training on the Development of Mentally Retarded Children." It is primarily oriented toward the problems concerning effects of homogeneous grouping as it relates to the special class for the mentally retarded. The study co-directed by Professors Kirk and McCarthy is concerned with a more circumscribed problem, namely the design and development of a differential diagnostic instrument for psycho-linguistic abilities. The third project directed by myself is concerned with the problems of programming for self-instructional devices. Let me briefly describe each of these and indicate their general character and relevance to the Institute's overall program.

The Efficacy of Special Class Training on the Development of Mentally Retarded Children. This study is designed to determine the mental, educational and social development of educable mentally retarded children who will be educated in a special class when they are six years old. They will be compared with a control group of educable mentally retarded children who will begin and continue in a regular class.

The general problem of concern in this research is the conception and detail necessary for a proper conduct of educational programs for mentally retarded children. Special classes for the mentally retarded were initiated in the public schools in 1896. Since that date almost all states have initiated special class programs in the public schools with state subsides to local districts to encourage the organization of such classes. However, up to the present time no one has demonstrated that children in

special classes develop mentally, academically, or socially at a more advanced rate than they might have, had they continued in the regular grades. In fact, three doctoral dissertations, one by Bennett (1932), another by Pertsch (1936) and a third by Blatt (1956) showed the opposite. Bennett and Pertsch each found that the educable mentally handicapped child in regular classes generally was equal to or superior in physical, personality, and academic performance.

These studies have three methodological deficiencies. The main one is selection. In studying the special versus regular class, in communities where special classes have already been established, it is impossible to control for selection factors which could bias such a study. Typically, the educable mentally handicapped child who exhibits behavior problems and marked learning disabilities in regular grades are the cause for the development of special classes or are the ones who are assigned to the special classes if they already exist. Thus, while the retarded child in special class might be comparable in IQ and MA to the retarded child in the regular class, for the special class child there have been reasons for his rejection from a regular class which could have important implications for his performance in school. Obviously, a variety of factors such as learning rate, ability, physical development, and personality characteristics could contribute to differences in the performance of those rejected from the regular class. A second factor is the specific experiences of the child prior to special class placement, especially as they relate to failure. These failure experiences could have important implications for the subsequent learning performance of the child. In the earlier studies, the special class children attended the regular grades from 2 to 5 years and then were placed in special classes for only a few years prior to the initiation of the study.

In addition to selection and experiential factors relating to failure, these studies did not identify special class programs in any of its important educational dimensions. This is the third potential contributor to the results reported; namely, the special class program itself.

The study which Dr. Goldstein in conducting avoids the errors in the design that have vitiated preceding studies in three ways: (a) its selection procedures are different in that only children who will begin school are used for both the special and regular class groups; (b) its assignment procedures are different in that children are assigned randomly to a special or a regular class; and (c) its program is based upon the Illinois curriculum guide for Teachers of the educably mentally handicapped.

This is a four year study which is now in its second year. Consequently, it is not possible to report findings as yet. In addition to the development of specific materials to implement the curriculum, measuring

instruments for the evaluation of personality and social development, as well as academic performance are being produced. These specially designed instruments are being used along with appropriate standardized instruments such as the Standford Binet, the Peabody Picture Vocabulary Test, the Metropolitan Achievement test, the Davis-Eells games, the SRA Primary Mental Abilities Test, and various group achievement tests. Other tests are the Lee-Clark Reading Test, the Harrison-Stroud Readiness Profile and the New York Test of Arithmetical Meanings.

Let me mention briefly then the general place of this study in the Institute's overall program. In our perception, the various instruments and criteria measures which will be used in assessing personality and social development as well as the means for implementing the special education curriculum will be important by-products of this study which could have continuing value. Another by-product is the longitudinal observation of intelligence and IQ changes. These instruments plus the methods and materials used for training should provide valuable insights into the particular problems and methods of dealing with them.

Since special classes are a considerable expense to educational systems, it is important to know whether or not they are justified, and if so, how they can best be managed so as to produce the results that are expected of them. It is to this general goal that Dr. Goldstein's research is directed.

Let me go on to the other two projects which, in contrast to the one just described, have more limited goals and objectives. One is a study by Professors Kirk and McCarthy. It is concerned with the development of a language ability test for young children with central nervous system impairment. It is hoped, however, that the instrument will be of sufficient general value to have wider application in the diagnosis of language impairment.

Although language development in young children has been studied by many investigators, the studies have been confined largely to normative surveys of developmental stages. Remedial work on the language processes of cerebral palsey children have been confined largely to speech correction. Educational and remedial programs are presently on a trial-and-error basis due primarily to the lack of differential diagnostic instruments to reveal the basic defects of particular children. It is upon this kind of information that a sensible and effective remediation program can be developed. Needless to say, it is important to do research on the techniques for accomplishing the remediation once we have valid instruments to identify the problems of concern. It is on the diagnostic problem that the research of Kirk and McCarthy is concentrating at present.

Within recent years there has evolved an increased interest amo psychologists and linguists in communication theory and their collab ative efforts have resulted in an emerging area which is called psych linguistics. One of the pioneers in this general area is Professor Charles Osgood of the University of Illinois, who has furnished a plausible theore cal framework within which tests could be constructed for the purpo of studying in a differential manner the language processes of childre The theory has led to the basic research which is currently underway i the development of the Illinois Test of Psycholinguistic Abilities.

Osgood postulates three major dimensions which specify a give language ability: they are levels of organization, psycho-linguistic pr cesses, and channels of transmission. Each major dimension is sub-divide as follows. The two levels of organization are the representational and th automatic-sequential level. The representational level refers to the meanin or significance of language symbols, whereas the automatic-sequenti level involves the retention of symbol sequences and the execution o sequential habits.

The three psycho-linguistic processes are decoding, encoding an association. Decoding refers to the comprehension of the auditory o visual stimuli; encoding is the expressions of one's ideas in words o gestures; and association is the ability to manipulate linguistic symbol internally. Association presupposes decoding and precedes encoding, bu it is distinct from both and consequently, can malfunction separately Operationally, association ability is assessed by word association tests analogies tests, tests of similarities and differences, etc. The third dimensio of the model are the channels of communication. These are the route through which communication flows in a language user. Each language ability must be specified according to a mode of sensory input and/or mode of sensory output. On decoding tasks, the visual or auditory input is important. On encoding tasks, the mode of vocal output is important. O association tasks, the channel[2] (both input and output) is important. Thus a language ability must be specified by its three dimensions—level, pro cess, and channel.

These three dimensions are the basic theoretical structure around which specific tests of language ability have been designed to cover children from 2½ to 9 years of (chronological) age. Of interest is the general conception used in designing the tests for the total battery. Obvious ly, it is not possible to eliminate the contribution of each of these dimen

[2] *Channels of Communication: This dimension describes the sensory-motor path ove which linguistic symbols are received and responded to. It is divided into mode o reception and mode of response. To testing decoding ability only the mode o reception (auditory or vocal) need be specified (i.e., it is irrelevant how the sub ject responds). To test encoding ability only the mode of response, vocal or motor need by specified. To test association ability, or a combination of abilities simul taneously, the entire channel must be specified.*

sions while assessing a particular one. Consequently, the notion of minimizing other dimension while maximizing a particular one was a strategy adopted. In every test the examiner must stimulate the subject who has to decode and then respond, consequently, he is also required to encode. These are minimal requirements and necessary for testing to take place. Since they cannot be controlled through their elimination, as might be the case with levels and channels, it is necessary to attempt to control the differential difficulty of these processes in particular tests. If, for example, in a decoding task the encoding can be held constant at a very simple level, then encoding would be functionally separated from decoding and the variance in the scores could be associated with the latter process rather than the former. Consequently, for example, auditory decoding could be assessed by asking questions of greater difficulty and requiring a simple encoding response of "yes" or "no" for both easy and hard items.

With this general strategic consideration in mind, 9 tests were developed for the battery. After three major revisions, the test is now in semi-final form and age grade norms have been developed. Preliminary administration of the test to groups beyond the normative sample have indicated interesting profiles which suggest that the test is accomplishing its original objective. The actual validation of the test for the purpose which it is designed remains to be determined. However, should these ends be accomplished even only crudely the test will represent an important departure in a direction badly needed in present day treatment of the mentally retarded. However, if goals are achieved with even modest degree of success, the hard road is ahead, namely, developing the techniques for remediation. These are an important part of the Institute's program to which we can now draw our attention.

Programming for Self-instructional Devices. Research on programming for self-instructional devices is being conducted under a Co-operative Research Project. In this research we are concerned with identifying efficient methods of tutorial instruction which are appropriate both to a particular subject matter and a particular group of learners. Our existing project is specifically concerned with a set of programming principles and their relative effectiveness in teaching mentally retarded children. This research is based upon a model of the learning process which I have found useful in other contexts both with respect to its capability of generating implications for the way to prepare and use study materials to optimize rate of learning.

For example, implications were used in the design of a teaching machine which we have built in prototype. It will accommodate a wide variety of materials used in the education of children including the mentally retarded. We affectionately refer to this machine as the Illinois

Device for Independent Operation and Training. (IDIOT). This devi implements many basic principles of learning — contiguity and immedia of reinforcement — in a way which permits one to accomplish instructio in a highly consistent yet flexible manner independent of the presence a live teacher. The decisions regarding the content of the instruction how ever remain the responsibility of the teacher. The device is simply a instrument, or means for accomplishing certain important teaching fun tions in a tutorial and systematic manner with the proper controls and, i addition, it provides a continuous record of every response made by th child. Thus, it is possible to modify the program and to improve its effec tiveness, on the one hand, and on the other hand, to determine from th error record the particular difficulties confronting each child, so that th teacher can make efficient decisions regarding the subsequent programs wit which to provide the child.

Initial research on problems associated with what we call intra item sequencing has revealed some basic information that was helpfu not only in designing the machine, but also in the preparation and use of the instructional program. We have found, for example, that *prompting* and *confirmation* procedures are not equivalent in terms of the rate of learning they produce, and when each is used with different amounts of overlearning they produce different effects on retention. Thus, while *prompting* is more effective for learning, with large amounts of over-learning, the *confirmation* condition results in significantly better retention scores when measured by either recall or by recognition tests; furthermore, these differences are consistent after 24, hours, 7 days, and one month.

I mention these details about the initial study to indicate that an important part of our research program is concerned with the "fine grain" of educational problems. In my view this is necessary if we want to identify the optimum conditions for instruction.

Another dimension to this fine grain analysis is that it is to make the principles of programming explicit so that the teacher can learn them and be free to choose the content which is most appropriate for a particular child. Thus the teacher can implement that content either personally or by some automatic device such as a modern teaching machine. Furthermore, the requirements for machine and program design will be made explicit for use in making decisions about the acceptability of programs developed by various groups.

The research on programming principles is concerned with the development of knowledge about instructional techniques which can be used once a differential diagnosis has been made. We want to know not only what conditions are generally more effective in instruction, but also what particular variations in technique are required to compensate for

the particular deficiencies of the child. On this latter problem, we have not yet made research studies. This will come about now that the language test is available.

With respect to immediate problems of research, we are investigating principles for programming reading, spelling, and arithmetic. These will be investigated in terms of the basic problems suggested by our learning model. They include the cue and discrimination problems, the response learning problems, and the associative problems which relate to the mediation habits necessary for the formation of concepts and solution of problems. In other words, in the context of educational programming, we will be investigating the relative importance of variables relating to these three fundamental processes in learning.

Summary

In summary I would like to point out that the program in the Institute is one which is not rigid and inflexible. The kinds of activity currently being described relate rather neatly to one another and are obviously an outgrowth of the interaction of investigators with different interests and with different backgrounds and training. We feel that this firmentation through inter-disciplinary interaction is an important feature of the Institute's program. The interaction of psychologists with linguists and sociologists, for example, has been very fruitful and many of the more seminal ideas that have been important in the research program of the Institute have, to a considerable extent, come about through this inter-disciplinary interaction.

A final note with which I would like to leave is that all is not a bed of roses. Anyone concerned with research knows of the many difficulties that do arise. In our particular program, one of the important problems is the lack of a research laboratory. We have to work with many agencies and adapt our program to theirs and to external factors which do not make for the most efficient development of research results. Furthermore, it limits the range of problems one can study. One way in which research on mental deficiency could be greatly accelerated would be if there were in existence many more small institutions designed and dedicated to research on their behavioral problems.

Selected References

Falconer, George. A mechanical device for teaching word recognition t young deaf children. Unpublished doctoral dissertation, Universit of Illinois, 1959.

Farber, Bernard. Effects of a severely mentally retarded child on famil integration. *Monog. Res. Child Devel.* 1959, 24, No. 2.

————Family organization and crisis: Maintenance of integratio in families with a severely mentally retarded child. *Monog. Re Child Devel.* 160, 25, No. 1.

————Perceptions of crisis and related variables in the impact of retarded child on the mother. *Jour. of Health and Hum. Behav.* 196 1, 108-118

————, with Jenne, W. C., and Toigo, R. Family crisis and th decision to institutionalize the retarded child. *Council of Excep Child Res. Monog. Ser.* Series A, 1960, No. 1.

————and Marden, Philip. High-brow versus low-grade statu among institutionalized mentally retarded boys. *Social Problems,* i press.

Gallagher, James J. *The tutoring of brain-injured mentally retarded children.* Springfield: Charles C. Thomas, 1960.

Goldstein, Herbert, with Seigle, Dorothy. A curriculum guide for teacher of the educable mentally handicapped. Issued by the Superintendent of Public Instruction, Circular Series B-3, 1958, No. 12, 267 pp.

Jordan, Laura J. Efficacy of a reading readiness Program with the educable mentally retarded. Unpublished doctoral dissertation University of Illinois, 1960.

Kirk, Samuel A. *Early education of the mentally retarded—an experimental study.* Urbana: University of Illinois Press, 1958.

McCarthy, James. Qualitative and quantitative differences in the language abilities of young cerebral palsied children. Unpublished doctoral dissertation, University of Illinois, 1957.

————The application of a theory of communication to the problems of the deaf and hard of hearing: Implications for research. *Senate Document No. 66, 85th Congress, 1st Session* (Report of the Proceeding of the 38th Meeting of the Convention of American Instructors of the Deaf), U. S. Government Printing Office, Washington, D. C., 1958, 177-187.

————A test for the identification of defects in language usage among young cerebral palsied children. *Cerebral Palsy Rev.*, 1960, 3-5.

Marden, Philip. High-brows and low-grades in boys' wards. Unpublished Master's dissertation, University of Illinois, 1960.

Sievers, Dorothy J. Development and standardization of a test of psycholinguistic growth in pre-school children. Unpublished doctoral dissertation, University of Illinois, 1955.

Stolurow, Lawrence M. Teaching machines and special education. *Educ. psych. Msmt.* 1960, 20, No. 3, 429-448.

————Automation in special education. *Excep. Child.*, 1960, 27, 78-83.

————Requirements for research on learning in mental deficiency. *Amer. J. ment. Defic.*, 1959, 64, 323-332.

————Teaching by machine. Cooperative Research Monograph, No. 16, U. S. Office of Education, in press.

Description of NIMH-Sponsored Research Programs at Pacific State Hospital[1]

Harvey F. Dingman

PACIFIC STATE HOSPITAL has two federally supported research programs. The older of these — #3M-9130, Population Movement Study — is a five-year special grant from the National Institute of Mental Health. The first aspect of this study concerns the *admission period*. Certainly, this is the richest source of data for the hospitalized mentally retarded. At admission we have perhaps a better, more accurate set of information about the applicant's abilities, his parents' social and financial characteristics, and the emotional problems of the family. A series of papers has been published using these admission data (Tarjan, Wright, Kramer, Person, and Morgan, 1958; Tarjan, Wright, Dingman, and Sabagh, 1959; Tarjan, Wright, Dingman, and Eyman, 1961). We have shown that patients rather typically can be divided into two types (Dingman and Miller, 1960):

1. The first of these is the severely retarded individual, typically Caucasian. His parents are of average or higher social class and have at least a high school education. This patient is usually admitted prior to his ninth birthday. In addition to being severely retarded, he usually has a substantial number of secondary physical handicaps.

2. The second type of patient is only mildly retarded, and is often Negro or Mexican. His parents are of lower social class and have less than a high school education. He is very unlikely to have secondary handicaps. This kind of patient is admitted to the hospital because of community complaints, often because of sexual delinquency. He is often made a ward of the court.

These two types of patients are represented at Pacific State Hospital in approximately equal numbers although they are assigned to different wards because of the distinctly different kinds of problems they pose to the hospital staff regarding care and treatment.

The second major aspect of the Population Movement Study is the in-hospital investigation. Together with a sociologist and an anthropologist, we have explored such questions as: "What actually happens on a ward of

HARVEY F. DINGMAN, PH.D., is Project Director, Pacific State Hospital, Pomona, California.

[1] *Presented at the Symposium: "Comprehensive Research Programs — Organization, Trends and Findings" of the Annual Meeting of the American Association on Mental Deficiency, Cincinnati, Ohio, May 2-6, 1961.*

severely retarded patients over a 24-hour period of time?" "How do these people occupy themselves?" Certainly the methodology of ward observation research leads to studies of interactions between patients and staff which can be utilized for therapeutic ends. This is one of our major needs in the hospital research program. We have carried out studies on such practices as acquiring self-inflicted tattoos (Edgerton and Dingman, 1961); securing a job, such as car washing, for which some employees will pay the patient (Edgerton, Tarjan, and Dingman, 1961); the establishing and maintaining of friendship relations with other boys and girls and members of the staff. It is interesting that in the course of interaction with employees, the nursing staff and even the physicians are often manipulated by patients who "know the ropes" in the institution to an extent that would seem unbelievable. Other more conventional aspects of hospital life that have been analyzed are mortality in the institution (Miller, Sabagh ,and Dingman, 1960; Sabagh, Dingman, Miller, and Tarjan, 1959), morbidity on the wards, and the pattern of the use of restraints and seclusions, as well as special reports of unacceptable behavior.

Another important aspect of the Population Movement Study deals with release from the institution. Following the lead of Dorn (1950), Kramer (1959), and Kramer, Goldstein, Israel, and Johnson (1956), the various hospital programs have been studied in order to examine the kind of patients who get into them and to evaluate their effectiveness. For example, the average non-Caucasian, mildly retarded individual with a history of juvenile delinquency, who comes into the hospital after the age of 14, rather typically stays a little over a year before he is returned, on a release program to his family. This is primarily due to the fact that his family regards him as not being mentally retarded.

Studies have indicated that the work leave program typically does not lead to discharge from the hospital as it is generally restricted to individuals who are in their twenties (Tarjan, Dingman, Eyman, and Brown, 1960), have been in the hospital at least eight years, and, in addition, have families that are unwilling or uninterested in their return to their home. Thus, success on work leave implies something different from success on home leave.

The family care program, which places a patient in the home of a non-relative certified for caretaking, is the hospital's largest release program. Studies relating to family care have demonstrated the difficulty of predicting the characteristics of family care mothers who keep patients out of the hospital for differentially long periods of time (Windle, Sabagh, Brown, and Dingman, 1961). However, patients who did go into family care homes surprisingly had IQs above 30, were almost always toilet trained, and were really custodial problems and school children rather than more severely retarded bed patients (Brown, Windle, and Stewart, 1959).

Finally, there is the escape or unauthorized absence. This mode of release was perhaps the most interesting in that a substantial amount of hospital folklore was discovered which proved to be inaccurate (Windle and Dingman, 1959). Almost all escapees are recovered in five days, the majority being found within 24 hours. It was hospital gossip that the patient who escaped from the institution and who was not discovered within 30 days was probably "adjusting satisfactorily in the community." Based on a follow-up of all patients who escaped during fiscal 1953, Dr. Windle of our staff discovered that all patients who were not returned to the hospital were in jail or prison because of some crime committed while they were away from the hospital.

The fourth major aspect of our investigation is involved with the follow-up studies. Follow-up studies are long, difficult, expensive enterprises. While we have done a number of follow-up studies of particular cohorts of released patients, perhaps the most interesting one that I can mention is the follow-up of patients that are discharged from work leave. These individuals uniformly found themselves a normal person with whom they established a symbiotic relationship. The girls quite typically found themselves normal husbands. The male patients formed relationships with an emplorer who in exchange for their services was keeping them in the community. However, all of these discharged individuals can be said to be teetering on the brink of social maladjustment. They have never developed the skills or the attitudes necessary to earn their own way.

Some additional work has been carried out because patient description measures have been regarded as something less than satisfactory. The new diagnostic nomenclature, while valuable for medical and somatic treatment, does not describe the patient as completely as we would like. For this reason, part of our group has been developing a factor-pure test battery to measure the abilities of mentally retarded individuals with the same kinds of measures that have been used to describe the abilities of college students and other normal individuals (Meyers and Dingman, 1960). Normal children of comparable mental age have been tested, and while the work is still in its infancy, it appears that the mentally retarded individual has the same abilities as a normal child of the same mental age (Meyers, Dingman, Orpet, and Attwell, 1961). The same tests identify the same factors, but in the retarded, the factors are more highly correlated. While it is too early to speculate, the only specific finding with respect to diagnostic categories seems to be a singular deficiency in the verbal area for the patients with mongolism (Meyers, Dingman, Attwell, and Orpet, 1961). It is hoped that as specific tests of the various independent abilities are developed, one may learn more about the kinds of intellectual deficiency that are caused by different kinds of mental retardation when one knows the etiological cause.

The second of our major investigations is our Data Processing Laboratory, NIMH Grant #OM-469. In the process of studying the physical, mental, and behavioral characteristics of the patients as they move in and out of the hospital, we were struck with the amount of information that was available which could be utilized for better care and treatment of the patient.

There were also medical research possibilities that had never been exploited. From this knowledge, we began to think in terms of another research project which would be specifically concerned with the concept of an automated patient information file. Such a file could have both practical and research implications. Much of the information which had come out of the Population Movement Study would furnish us with a very good "base" file into which additional information could be incorporated.

This project has gotten "off the ground" in developing forms and experimenting with reporting systems which can provide additional valuable information regarding patient care and efficient hospital operation. More specifically, the purpose of the forms is first of all to develop an information file which can be stored in an IBM unit or on magnetic tapes so that this information concerning individual patients or groups of patients can be quickly retrieved. Research reports regarding the overall hospital program can show the interrelationships among individual programs in the hospital. The usual hospital report is simply a one-dimensional study in time relating a particular topic to a set of variables.

The operational utility of an information file of this type cannot be overestimated as long as it can be kept accurate, up-to-date, and convenient for use. Hospital decisions continually need to be made concerning the reassignment of patients on the wards, the reassignment or retaining of hospital personnel, the construction of new buildings, and the projection of bed demands for various types of patients taking into account morbidity, mortality, and admission and release rates. These are all topics that depend on an information file.

Thus, growing out of our research on the admission and release of patients, we have developed a program which is important to the operation of the hospital. It's often pointed out that there is nothing so practical as the results of basic research.

References

Brown, S. J., Windle, C., and Stewart, Elizabeth. Statistics on a family care program. *Amer. J. ment. Defic.,* 1959, 64, 535-542.

Dingman, H. F. and Miller, C. Note on use of correlation statistics and population analysis. *Amer. J. ment. Defic.,* 1960, 64, 636-637.

Dorn, H. F. Methods of analysis for follow-up studies *Hum. Biol.,* 1950, 22, 238-248.

Edgerton, R. B. and Dingman, H. F. Tattooing and identity. Submitted *Inter. J. soc. Psychiat.,* 1961.

Edgerton, R. B., Tarjan, G., and Dingman, H. F. Free enterprise in a captive society. *Amer. J. ment. Defic.,* in press.

Kramer, M. Measurement of patient flow in institutions for the mentally retarded. *Amer. J. ment. Defic.,* 1959, 64, 278-290.

Framer, M., Goldstein, H., Israel, R. H. and Johnson, N. A. Application of life table methodology to the study of mental hospital populations. *Psychiat. Res. Repts.,* June 1956, 49-76.

Meyers, C. E. and Dingman, H. F. The structure of abilities at the pre-school ages: Hypothesized domains. *Psychol. Bull.,* 1960, 57, 514-532.

Meyers, C. E., Dingman, H. F., Attwell, A., and Orpet, R. E. Comparative abilities of normals and retardates of MA 6 years on a factor-type test battery. *Amer. J. men. Defic.,* in press.

Meyers, C. E., Dingman, H. F., Orpet, R. E., and Atwell, A. Primary ability factors at MA 6: Hypotheses and results on normals and mentally retarded. *Soc. Res. Child Development,* in press.

Miller, C., Sabagh, G., and Dingman, H. F. Latent class analysis and differential mortality. Sumbitted *J. Amer. Stat. Asso.,* 1961.

Sabagh, G., Dingman, H. F., Miller, C., and Tarjan, G. Differential mortality in a hospital for the mentally retarded: A study of mortality among patients admitted to Pacific State Hospital, 1948. In *Proc. International Population Conference,* Vienna, 1959.

Tarjan, G., Dingman, H. F., Eyman, R. K., and Brown, S. J. Effectiveness of hospital release programs. *Amer. J. ment. Defic.,* 1960, 64, 609-617.

Tarjan, G., Wright, S. W., Dingman, H. F., and Eyman, R. K. The natural history of mental deficiency in a state hospital. III. Characteristics of patients and their families which may influence admission to the hospital. *Amer. J. dis. Child.,* 1961, 101, 195-205.

Tarjan, G., Wright, S. W., Dingman, H. F., and Sabagh, G. The natural history of mental deficiency in a state hospital. II Mentally deficient children admitted to a state hospital prior to their sixth birthday. *Amer. J. dis. Child.,* 1959, 98, 370-378.

Tarjan, G., Wright, S. W., Kramer, M., Person, P., Jr., and Morgan, R. The natural history of mental deficiency in a state hospital. I. Probabilities of release and death by age, intelligence quotient and diagnosis. *Amer. J. Dis. Child.,* 1958, 96, 64-70.

Windle, C. and Dingman, H. F. The front and back doors of a hospital for mental defectives. *Train. Sch. Bull.,* 1959, 56, 8-14.

Windle, C., Sabagh, G., Brown, S. J., and Dingman, H. F. Caretaker characteristics and placement success. *Amer. J. ment. Defic.,* 1961, 65, 739-743.

THE TRAINING SCHOOL

The Training School at Vineland, New Jersey, is one of the world's oldest research and demonstration centers for the care and treatment of the mentally retarded. Founded in 1888, it is a private and non-profit organization.

From its Research Laboratory have come such pioneering works as the Vineland Social Maturity Scale, The Kallikak Study, and the American adaptation of the Binet-Simon Intelligence tests. Current research studies are being supported by the National Science Foundation and the National Institute of Mental Health.

As a demonstration center the Training School at Vineland receives some 5000 visitors annually who observe the techniques and methods of treatment and training for the mentally retarded.

On the School's 1600 acres in the rolling farm land of Southern New Jersey is located every possible facility for care of the individual. Hospital, school, chapel, private lake, swimming pools, greenhouse, working farm land, and the many home-like cottages where the children live combine to create an atmosphere of happiness. Here, each child is an individual and his development is carefully nurtured by a complete professional staff along lines best suited to his needs and future capabilities. In line with this, the Training School offers seven comprehensive programs for the mentally retarded and those functioning at a retarded level:

- Observation and Diagnostic Program
- Residential Program
- Resident Community Programs
- Summer Recreational Program
- Out Patient Clinics
- Day School Programs
- Summer Speech-Hearing Program

SECOND CLASS MAIL

Form 3579 Requested

THE TRAINING SCHOOL
VINELAND, N. J.

A NEW COMMUNITY-WORK EXPERIENCE FOR MENTALLY RETARDED BOYS

The Training School at Vineland, N. J., since 1888 a pioneer in training and educating the mentally handicapped, now offers the POST HOUSE PROGRAM—a unique post-training resident-community program stressing intensive guidance and care in social-vocational endeavor. Campus residence in new 24-bed cottage, and where possible, work in salaried industrial, business, farm positions in community. Controlled supervision. Understanding educational and vocational trainers. Special privileges. Boys 18 yrs. & up (min. 10 yr. mental level) must complete 3-month observation-diagnostic, also apprenticeship periods. Program available July 1. Registration limited.